




# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/605,227	06/28/2000	Yutaka Kuba	81870.0009	6219
26021	7590	05/03/2004	EXAMINER	
HOGAN & HARTSON L.L.P. 500 S. GRAND AVENUE SUITE 1900 LOS ANGELES, CA 90071-2611			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/605,227	<b>Applicant(s)</b> KUBA, YUTAKA	
	<b>Examiner</b> Sung H. Pak	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on Nov. 10, 2003; Feb. 03, 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 16-24 and 26-29 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1-12, 16 and 17 is/are allowed.  
6) ☒ Claim(s) 18-24 and 26-29 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 19 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on Nov. 10, 2003 and Feb. 03, 2004 have been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

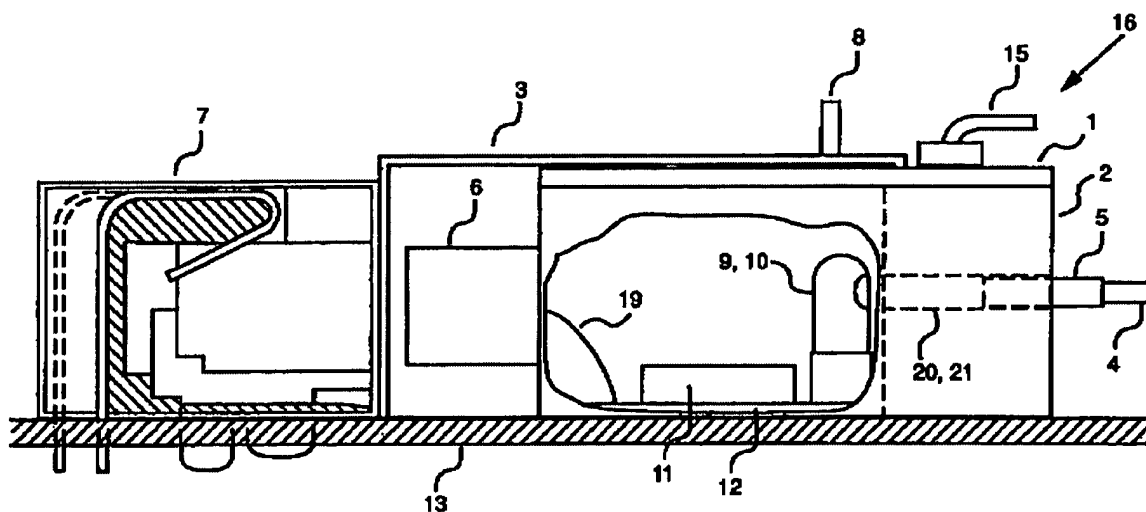
Claims 18, 24, 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Beckwith (US 5,615,292).

Beckwith reference discloses an optical device with all the limitations set forth in the claims, including: an optical module comprising a package casing provided with an electric terminal ('6') on a surface thereof (column 2 lines 49-50), the package casing having a mount space (area occupied by '12'); a substrate('12') bearing an optical element ('9,10'); an electrode drawn from the optical element (not shown in the figure below, but an electrode is inherently taught in the circuit board '12'); one end of a slender light transmitter (optical fiber '4'); the

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optical element and the one end of the light transmitter being fixedly attached on the substrate and optically coupled with each other (figure below); the substrate being placed in the mount space of the package casing (figure below); a bonding member ('19') which connects the electric terminal of the package casing (provided on '6') and the electrode pad on the substrate, the electric terminal being adapted to be electrically connected with an external circuit ('13') through a connector ('6,7') (See figure below and figures 1-2 of Beckwith).

Regarding claim 24, Beckwith also discloses: a connector ('7') including a receptacle (Figure below), a module connection terminal (figure below- curve shaped portion of the electrical terminal) and a circuit board connection terminal (electrical terminal portion that connects to element '13') electrically connected with the module connection terminal ('6') and connectable with an electric circuit board; wherein the reception space is opened to the electric circuit board ('13'); wherein the module connection terminal provided in the connector has the form of a spring (curved portion of the electrical terminal in '7') and exposed to the receptacle.



*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckwith (US 5,615,292) in view of Carney (US 4,466,696).

Beckwith reference discloses an optical device with the limitations set forth in the claims as discussed above, except it does not teach the use of <sup>a</sup>substrate having a V-groove, wherein one end of the light transmitter is fixedly attached in the groove (as recited in claim 19), or the substrate bearing a planar light wave circuit (as recited in claim 22).

On the other hand, Carney reference discloses an optical device with a planar light wave circuit (planar laser in Fig. 1), and a V-groove for coupling one end of an optical fiber (Fig. 1). Carney reference teaches that such arrangement is advantageous and desirable over the prior art because it allows for an accurate light coupling between the optical source and a transmission optical waveguide (column 2 lines 3- 29).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the planar light wave laser and V-groove substrate (as taught in Carney) in the mounting space of Beckwith, in order to ensure accurate optical coupling between the optical signal source and the transmission light guide.

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Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckwith (US 5,615,292) in view of Sjolinder et al (US 5,715,338).

Beckwith discloses an optical device with limitations set forth in the claims as discussed above. Beckwith teaches the use of protective cover ('1') covering the optical element and the light transmitter, but it does not teach the use of a protector formed 'on the substrate' as recited in the claim.

However, Sjolinder et al reference, explicitly teaches the use of a protector formed on the substrate that cover the optical element and the light transmitter (Fig. 4-5). Sjolinder et al teach that the protector formed on the substrate provides an impermeable encapsulation and effectively protects the optical element and the light transmitter. Impermeable encapsulation is desirable because it costs much less than the traditional hermetic encapsulation (column 1 lines 31-39).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beckwith device to have a protector formed on the substrate as taught in Sjolinder et al reference.

Claim 21, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckwith (US 5,615,292) in view of Palmer (US 3,963,920).

Beckwith discloses an optical device with limitations set forth in the claims as discussed above, except it does not teach the use of a ceramic package casing or a ceramic connector body.

However, the use of ceramic package casing or ceramic connector component is known in the art and widely used as shown by Palmer reference (column 2 lines 29-35: ceramic packaging and column 2 lines 45-46: ceramic connector portion). Ceramic optoelectronic

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packagings and connectors are widely used in the art because they efficiently dissipate heat and advantageously act as heatsinks for optoelectronic devices. Preventing overheating of optoelectronic devices is deemed desirable in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beckwith device to have a ceramic package casing and a ceramic connector element.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beckwith (US 5,615,292) in view of Carney (US 4,466,696) as applied to claim 22 above, and further in view of Palmer (US 3,963,920).

The claimed limitations are rendered obvious over Beckwith in view of Carney as discussed above, except neither reference teaches the use of ceramic package casing.

However, the use of ceramic package casing is known in the art and widely used as shown by Palmer reference (column 2 lines 29-35: ceramic packaging). Ceramic optoelectronic packagings and connectors are widely used in the art because they efficiently dissipate heat and advantageously act as heatsinks for optoelectronic devices. Preventing overheating of optoelectronic devices is deemed desirable in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beckwith device to have a ceramic package casing and a ceramic connector element.

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***Allowable Subject Matter***

Claims 1-12, 16-17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art fairly teaches or suggests an optical module having (among other things) an optical element, an electrical connection terminal, and a light transmitting waveguide all disposed on a substrate, wherein the light waveguide is fixed in the groove formed on the substrate and the electrical terminal is directly coupled to the external coupling connector, as claimed in the instant application.

Beckwith reference discloses the most similar prior art, however it does not disclose optical element, electrical connection terminal and light transmitting waveguide all disposed on a substrate, wherein the substrate has a coupling portion that directly couples with the external connector. Instead, Beckwith has a package casing having a coupling portion with electrical terminals that couple with an external connector.

***Response to Arguments***

Applicant's arguments, see pages 9-12 filed Nov. 13, 2003 and page 9 filed Feb 03, 2004, with respect to claims 1-12, 16-17 have been fully considered and are persuasive. The rejection of claims 1-12, 16-17 has been withdrawn and the claims are allowed.

Applicant's arguments filed Nov. 10, 2003 and Feb. 03, 2004 have been fully considered but they are not persuasive with respect to claims 18-24, 26-29.



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On pages 12-14 of response filed Nov. 10, 2003, it is argued that claims 18, 22 and 24 are patentable over the prior art, because "the combination of references fails to teach or suggest a 'package casing provided with an electric terminal on a surface thereof.'" (page 12, lines 22-23) The examiner respectfully argues that this is untrue. Although Beckwith reference does not explicitly draw the electric terminal on the surface of element '6', the specification makes it clear that electrical terminal is provided on the surface of the element '6' such that electrical connection is established between optical module and the external connector '7'. Therefore, the claimed limitations of the instant application is anticipated or made obvious in view of the prior art reference as applied in this office action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday - Thursday : 6:30am- 5:00pm.


The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Sung H. Pak', with a stylized, flowing script.

Sung H. Pak  
Examiner  
Art Unit 2874

sp